

Cell 1

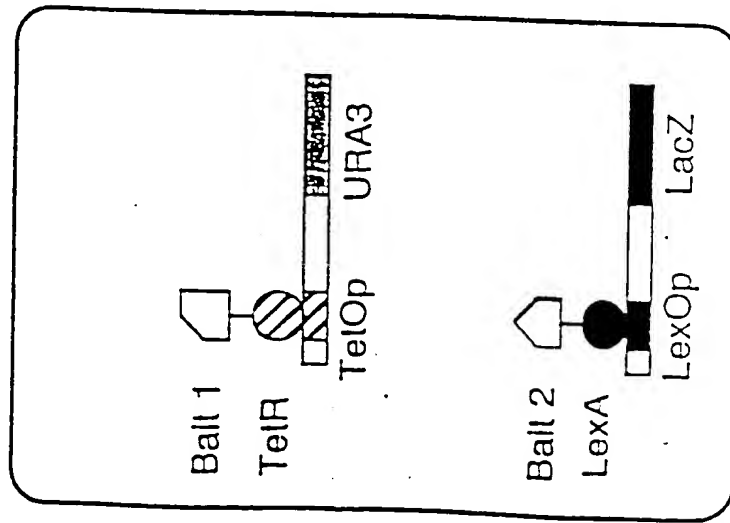


FIG. 1A

Cell 2

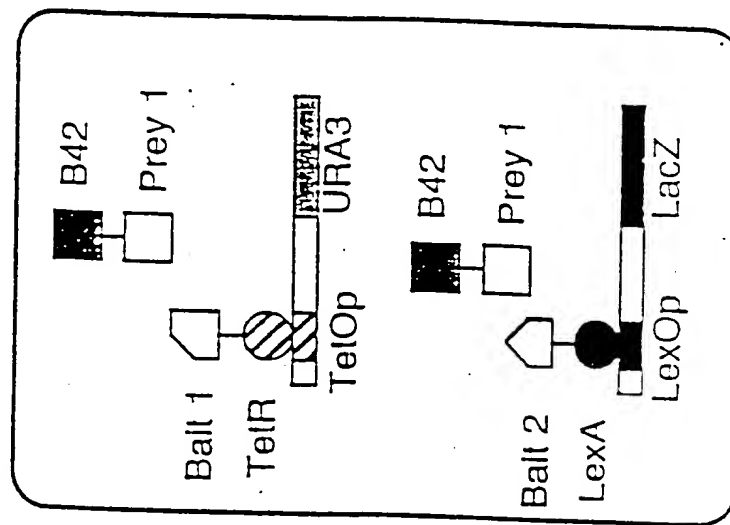


FIG. 1B

Cell 3

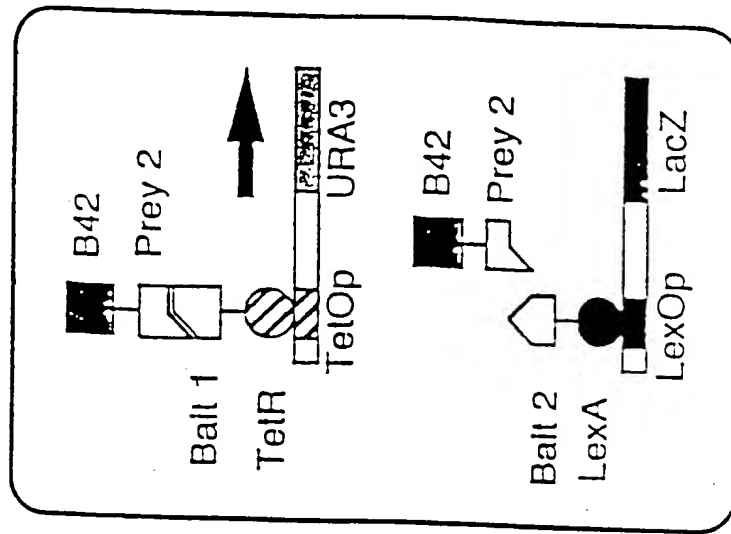


FIG. 1C

Baits	Prey	Reporter	Reporter Output		Logical Relationship
			X-Gal Glu	X-Gal Gal	
			URA- Glu	URA- Gal	
LexA-hSos1	B42-Ras	LexOp-LacZ			And
TetR-c-Raf1	B42-Ras B42	TetOp-URA3			
LexA-Max	B42-c-Raf1	LexOp-LacZ			Ls1
TetR-RasV12	B42-Mxi1	TetOp-URA3			Ls2
	B42-c-Raf1				
LexA-RasV12	B42-Cdc25	LexOp-LacZ			Ls1
TetR-RasA15	B42-c-Raf1	TetOp-URA3			Ls2
	B42-Cdc25				

Figure 2

FIG. 3A



Cell	LacZ Output	β -Galactosidase Activity
1		22.6 ± 3.3
2		7.4 ± 1.0

FIG. 3B

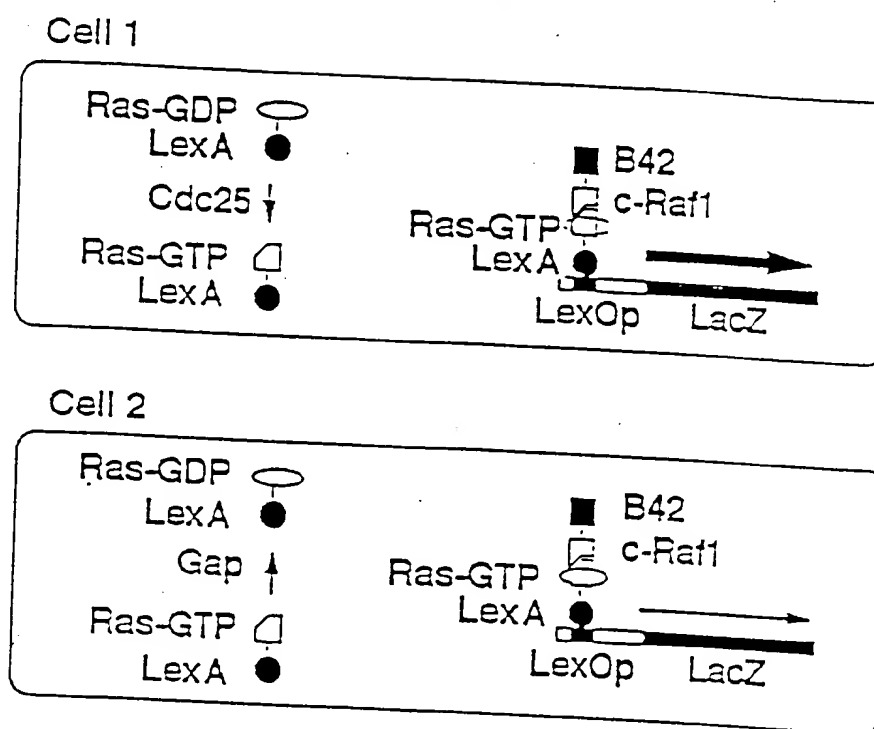


FIG. 3C

Input Values		LacZ Output
1 (B42-c-Raf1)	0 (GAP)	0
1 (B42-c-Raf1)	1 (Cdc25)	1

Logical Not

α factor = 0

TGF- β = 1

Input α -factor, output TGF- β

Input TGF- β , output α factor

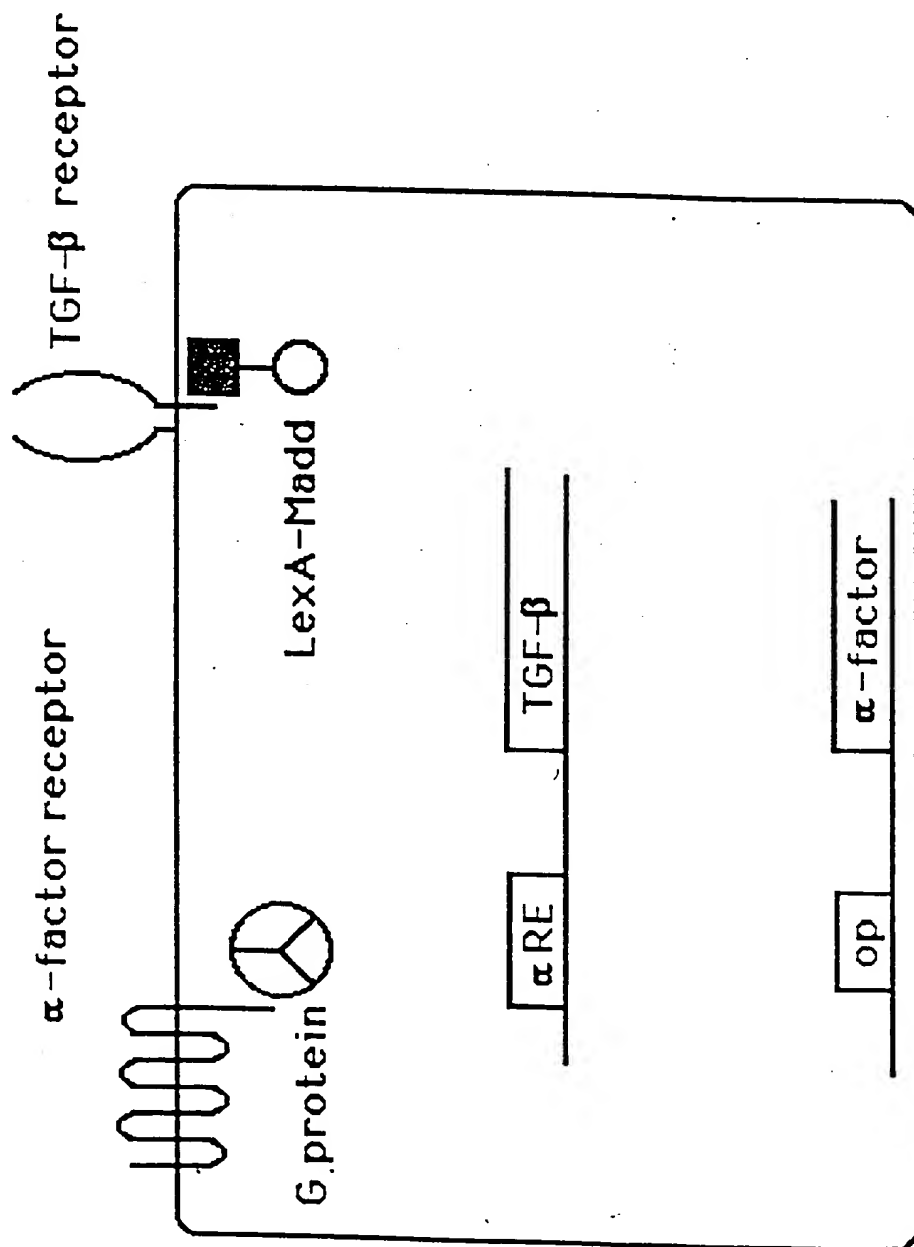


FIG. 4

Four input output channels

(variety of possible logical operations)

Inputs	Receptors
α factor	α factor R
TGF- β	TGF- β R
Delta	Notch
Bradykinin	Bradykinin R

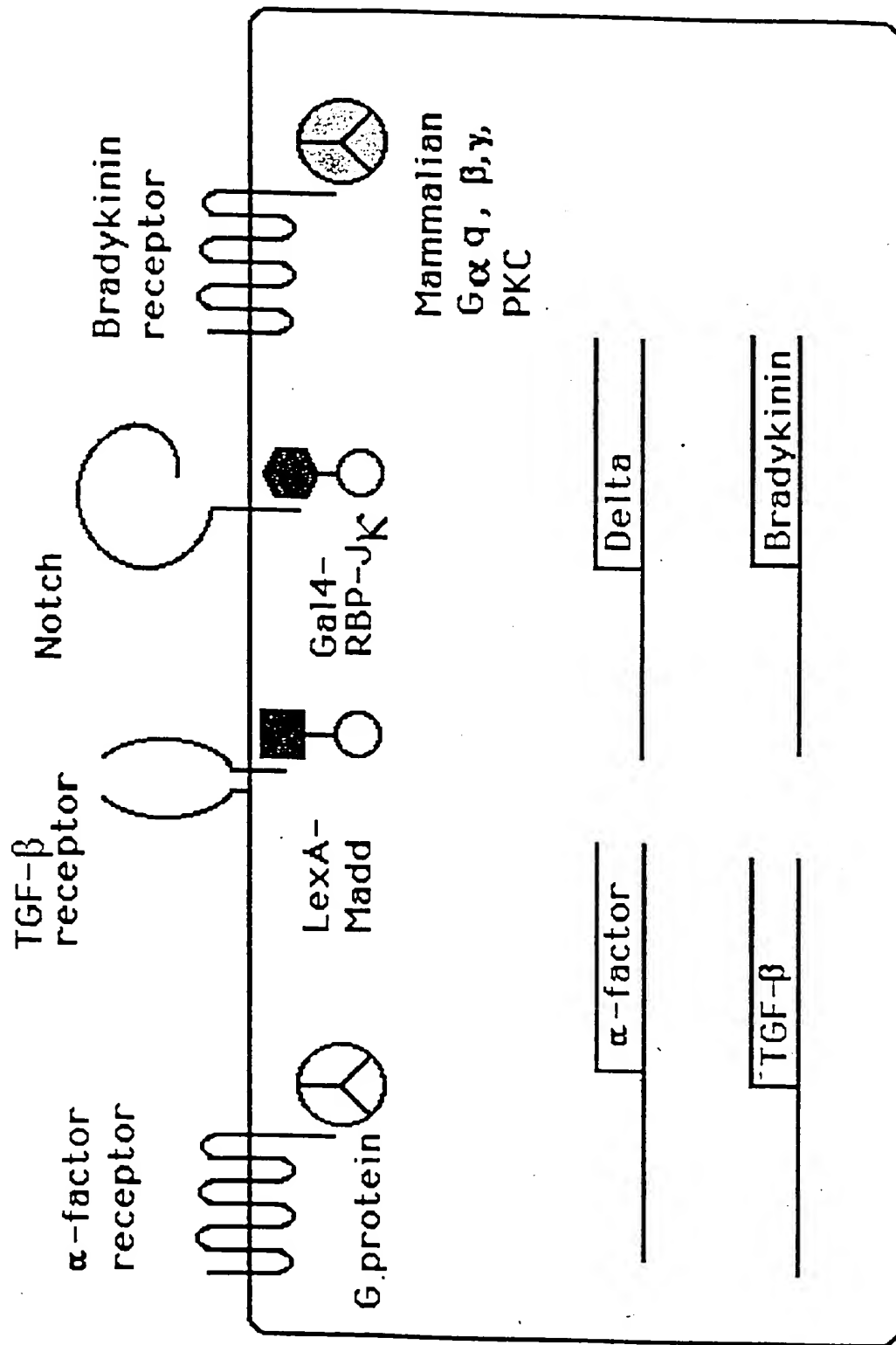


FIG. 5

Fluorescence resonance energy transfer "transistor"

No green light input	Green light input
HIV protease linker intact	Linker cleaved
Blue light input	Blue light input
Green light output	No green fluorescence

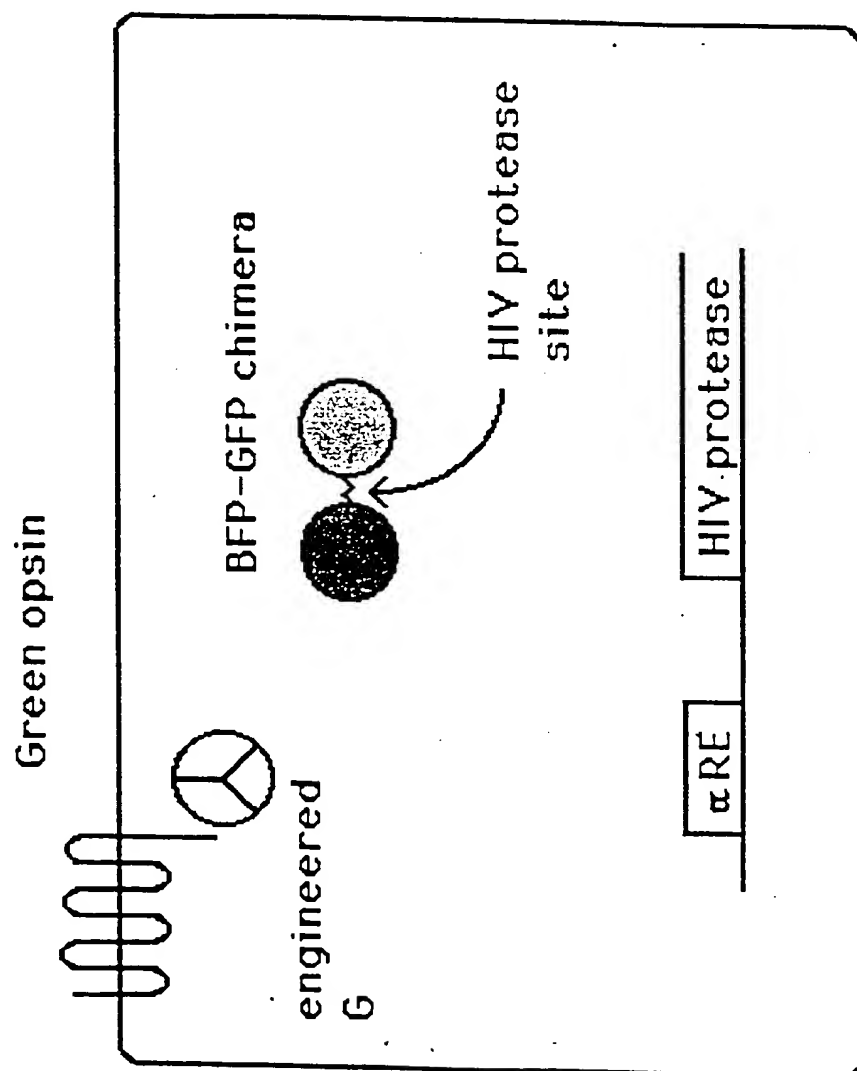


FIG. 6